



PETERSON SPRING

MANUFACTURERS OF ENGINEERED METAL PRODUCTS



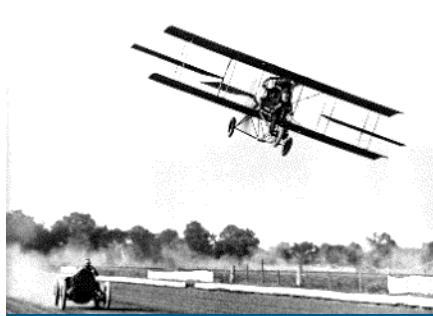
2020 Overview



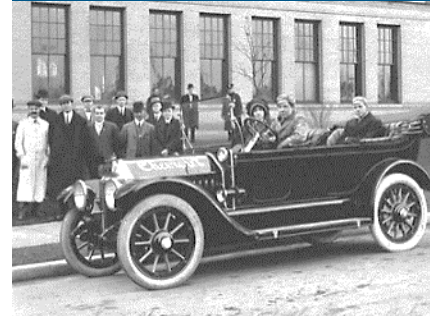
“Global Supplier of Choice”



Opened 1st spring factory in Detroit.



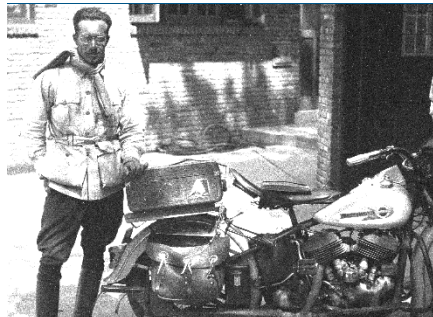
Developed engine valve springs for Barney Oldfield, famous American race car driver.



Supplied 100% of all mechanical springs used on the very first Chevrolet.



Thelma Peterson, 1st woman to graduate U of M with Mechanical Engineering Degree.



Key supplier to Harley Davidson.
(Bud Peterson w/1939 H-D)



Developed parts for both Apollo 11 & 12.



High performance applications.



Electric vehicles.



Remote control, teleoperation, follow-me, leader-follower and full autonomy vehicles.

10

Locations Worldwide

ISO/IATF Certified

Corporate Headquarters



Southfield, Michigan



Southfield, Michigan



Three Rivers, Michigan (2)



Greenville, Illinois



Maumee, Ohio



Athens, Georgia



Kingsville, Canada



Redditch, United Kingdom



Queretaro, Mexico

*Distributorships located in
N. America, Europe and Asia*



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Peterson's Top Markets

Automotive

MARKET SEGMENT

- Body
- Chassis
- Powertrain
- Engine
- Transmission
- Seating
- Braking



Commercial Vehicles

MARKET SEGMENT

- Body
- Chassis
- Powertrain
- Engine
- Transmission
- Seating
- Braking



Industrial

MARKET SEGMENT

- Aerospace and Defense
- Agriculture
- Appliance
- Lawn & Garden
- Medical / Healthcare
- Recreational Vehicles

APPLICATION

- Brakes
- Dock Levelers
- Engine Valve Springs
- Fuel System
- Landing Gear
- Press & Die
- Seating
- Vibration Isolation
- Other



Racing

MARKET SEGMENT

- Circle Track
- Drag
- Marine
- Off Road
- Powersports
- Street Performance & Hot Rod

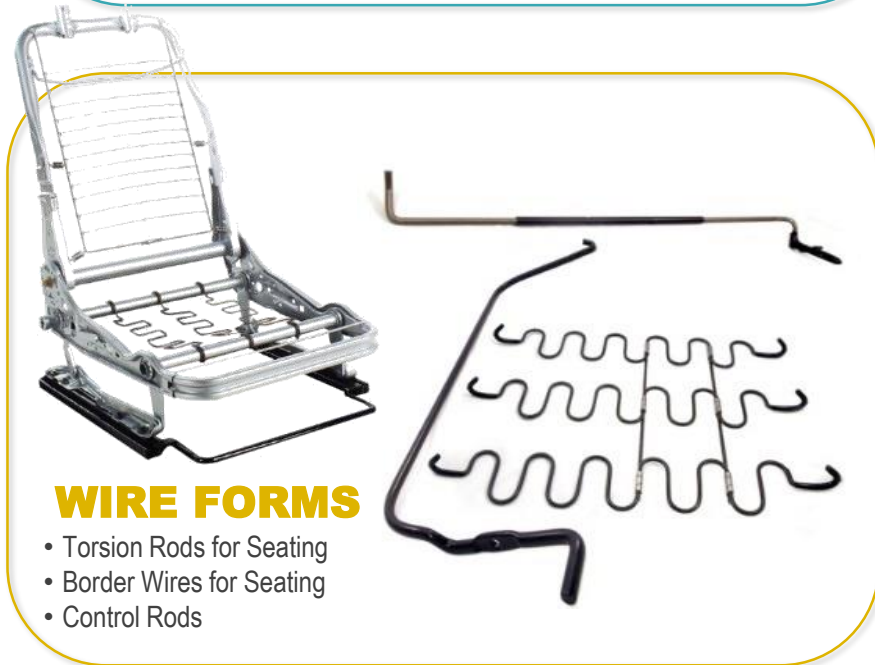
APPLICATION

- Powertrain
- Engine Valve Springs
- Fuel System Springs
- Locks
- Seats, Shims, Retainers

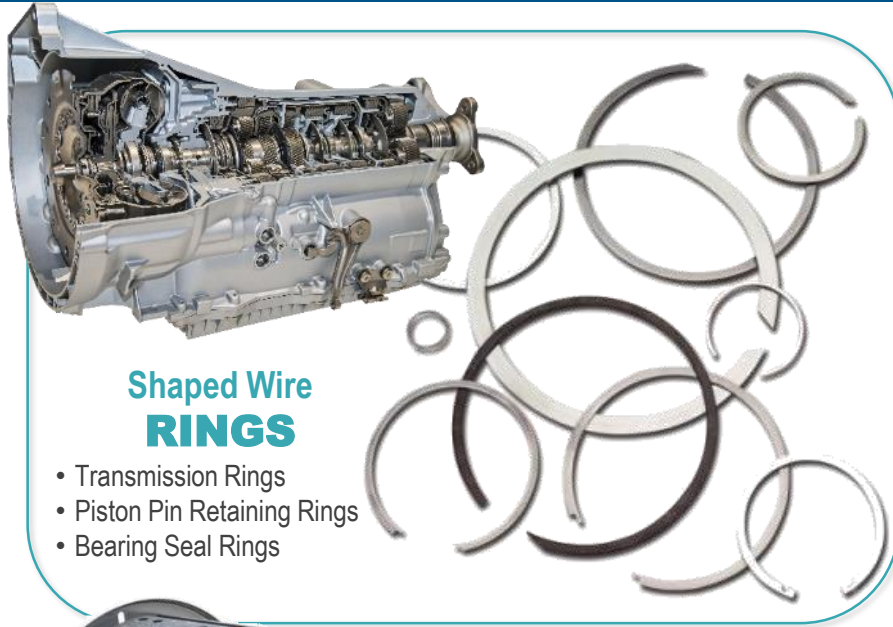


Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Engineered Metal Products



Engineered Spring Products



Shaped Wire **RINGS**

- Transmission Rings
- Piston Pin Retaining Rings
- Bearing Seal Rings



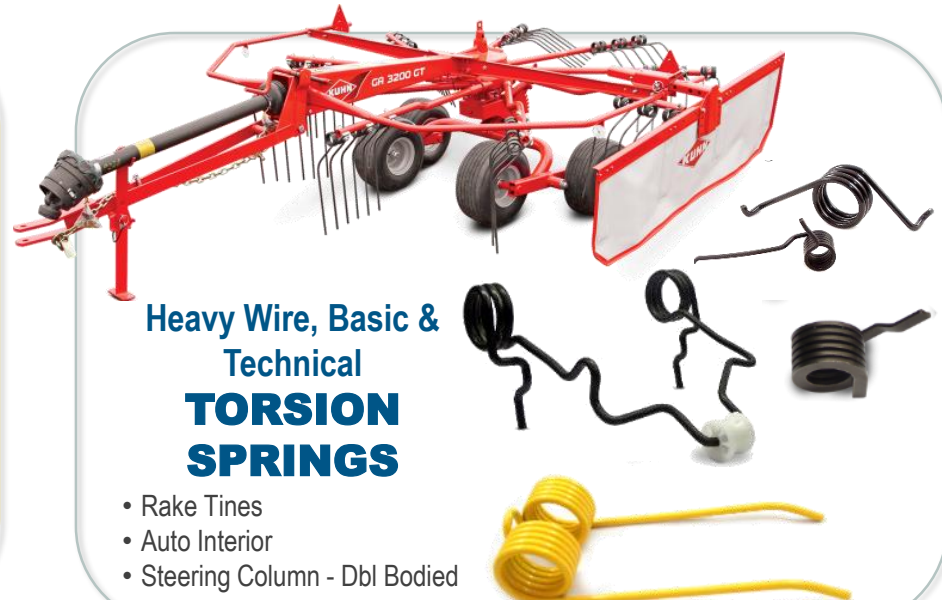
Heavy Wire, Basic & Technical **COMPRESSION SPRINGS**

- Clutch Springs
- Door Check Springs
- Engine Valve/Transmission Springs
- Die Springs



Heavy Wire, Basic & Technical **EXTENSION SPRINGS**

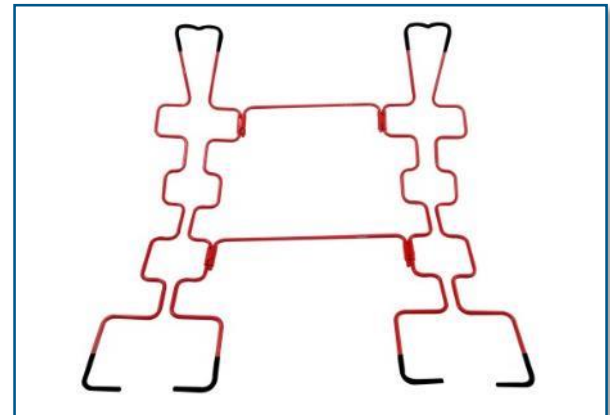
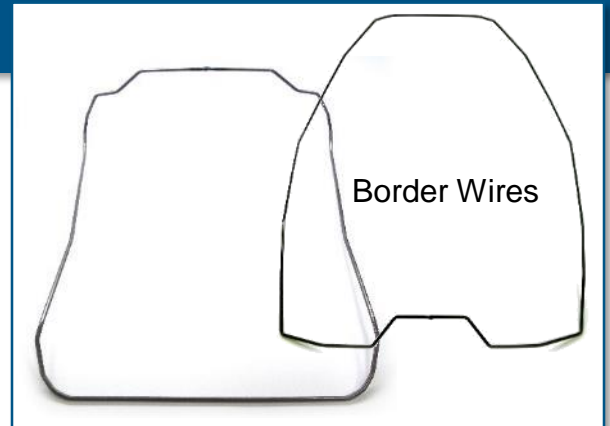
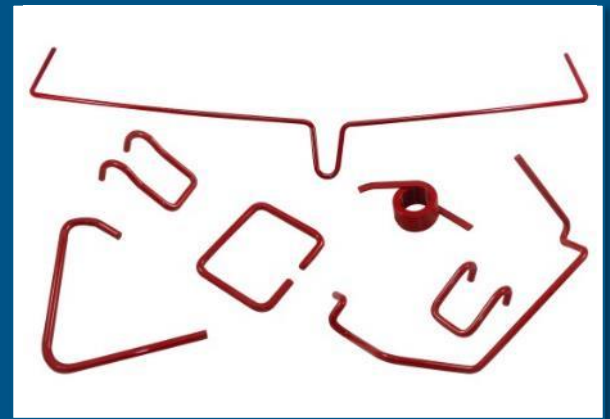
- Dock Leveler Springs
- Trampoline Springs
- Throttle Body Return Springs



Heavy Wire, Basic & Technical **TORSION SPRINGS**

- Rake Tines
- Auto Interior
- Steering Column - Dbl Bodied

Seating Products Solutions



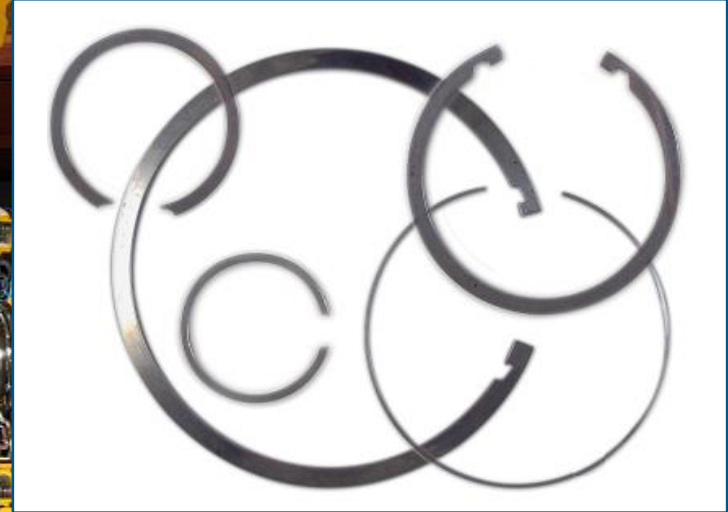
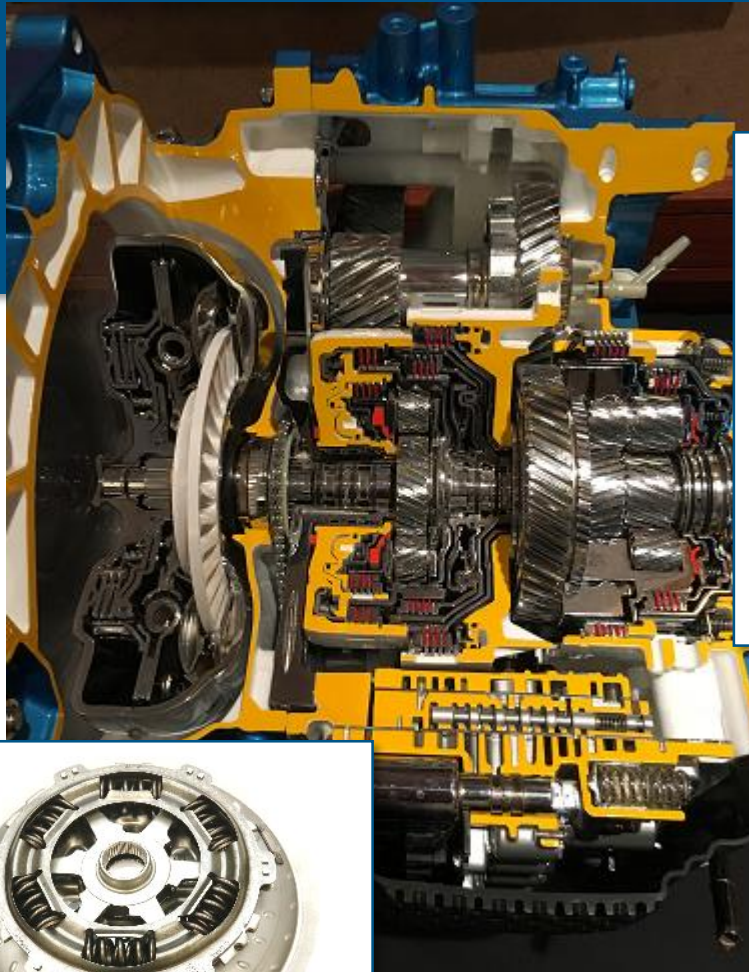
Products

- Extension Springs
- Torsion Springs
- Wire Forms
 - Welded or Clipped
 - Plastic Dipped
- Torsion Bars
 - Plastic Over Molding



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Powertrain Products Solutions



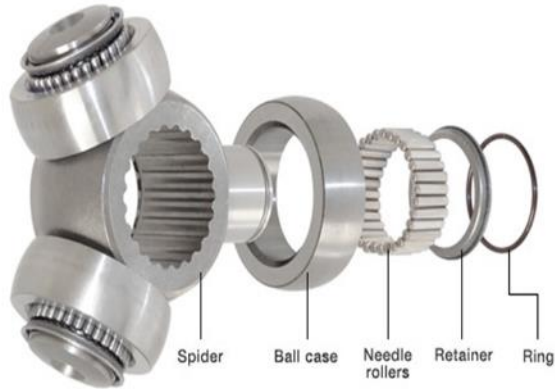
Products

- Compression Springs
 - Valve body compression springs
 - Torque converter compression springs
- Retaining Rings



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

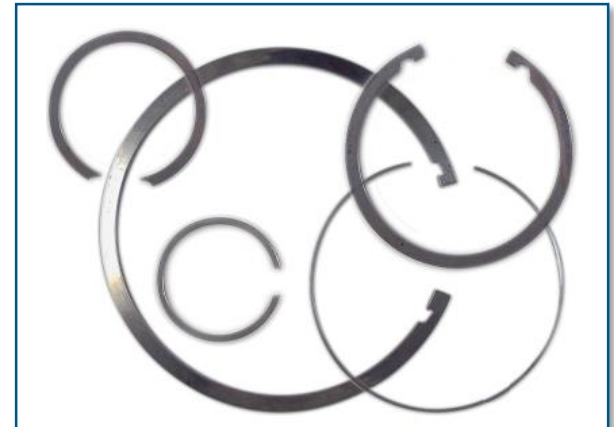
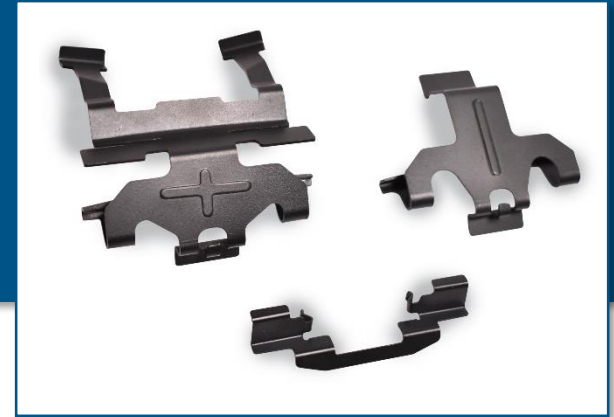
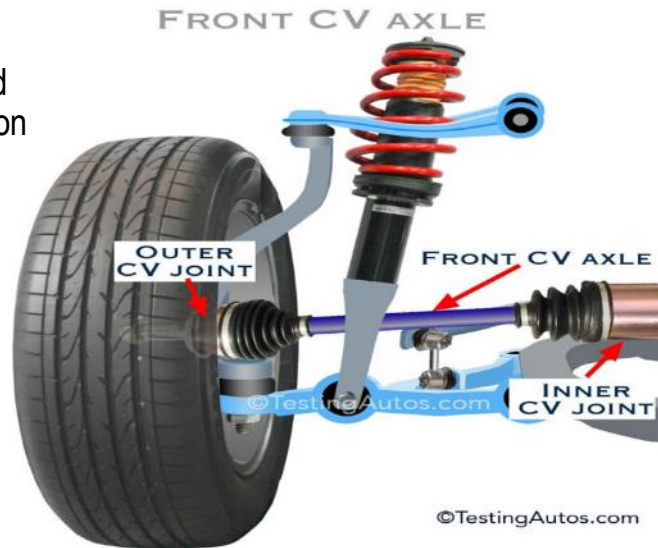
Braking and Suspension Products Solutions



Product Information

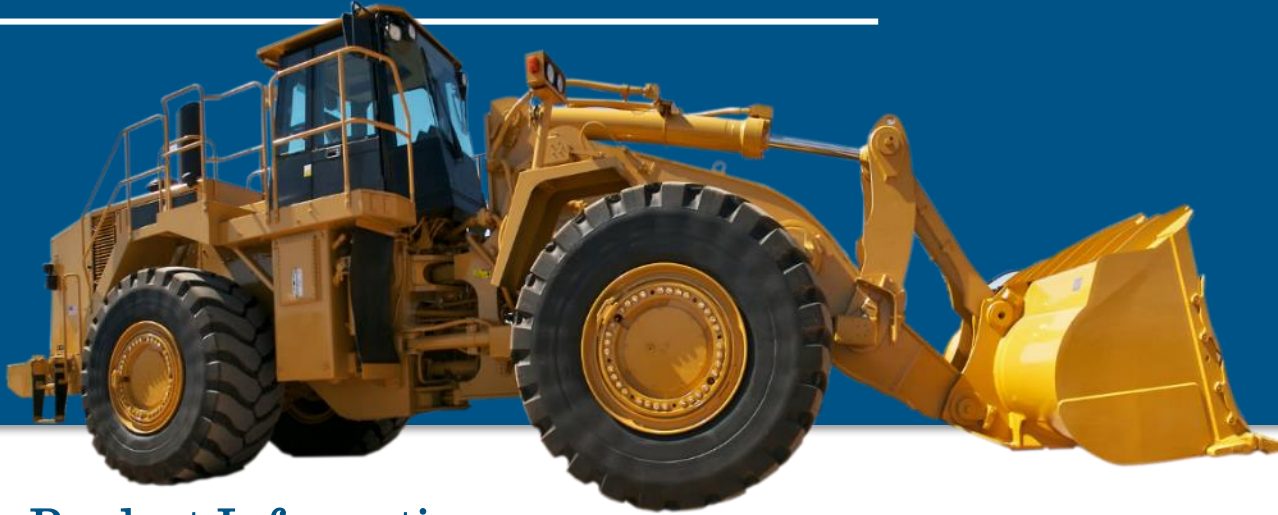
Springs, retaining rings and engineered metal products for brake and suspension applications.

- Manufacturing
 - Maumee, OH
 - Athens, GA
 - Greenville, IL
 - Queretaro, Mexico
 - Redditch, UK



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Heavy Equipment Products Solutions



Product Information

- Manufacturing
 - Greenville, IL
 - Athens, GA

Manufacturing Capability

- Wire Sizes up to 12.7 mm

Quality Standards

- IATF 16949
- ISO 9001

Cost Effective Manufacturing

Local engineering and validation



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Appliance Products Solutions



Product Info

- Manufacturing
- Three Rivers, MI
- Athens, GA
- Cost effective manufacturing
- Local engineering and validation



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Lawn and Garden Products Solutions



Product Info

- Wire Forms
- Engineered Metal Products
- Extension Springs
- Engine Valve Springs
- Snap Rings
 - Manufacturing
 - Athens, GA
 - Queretaro, Mexico
 - Three Rivers, MI
- Manufacturing Capability
 - Wire Sizes up to 12 mm
- Cost Effective Manufacturing
- Local engineering and validation



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Agriculture Products Solutions Capabilities



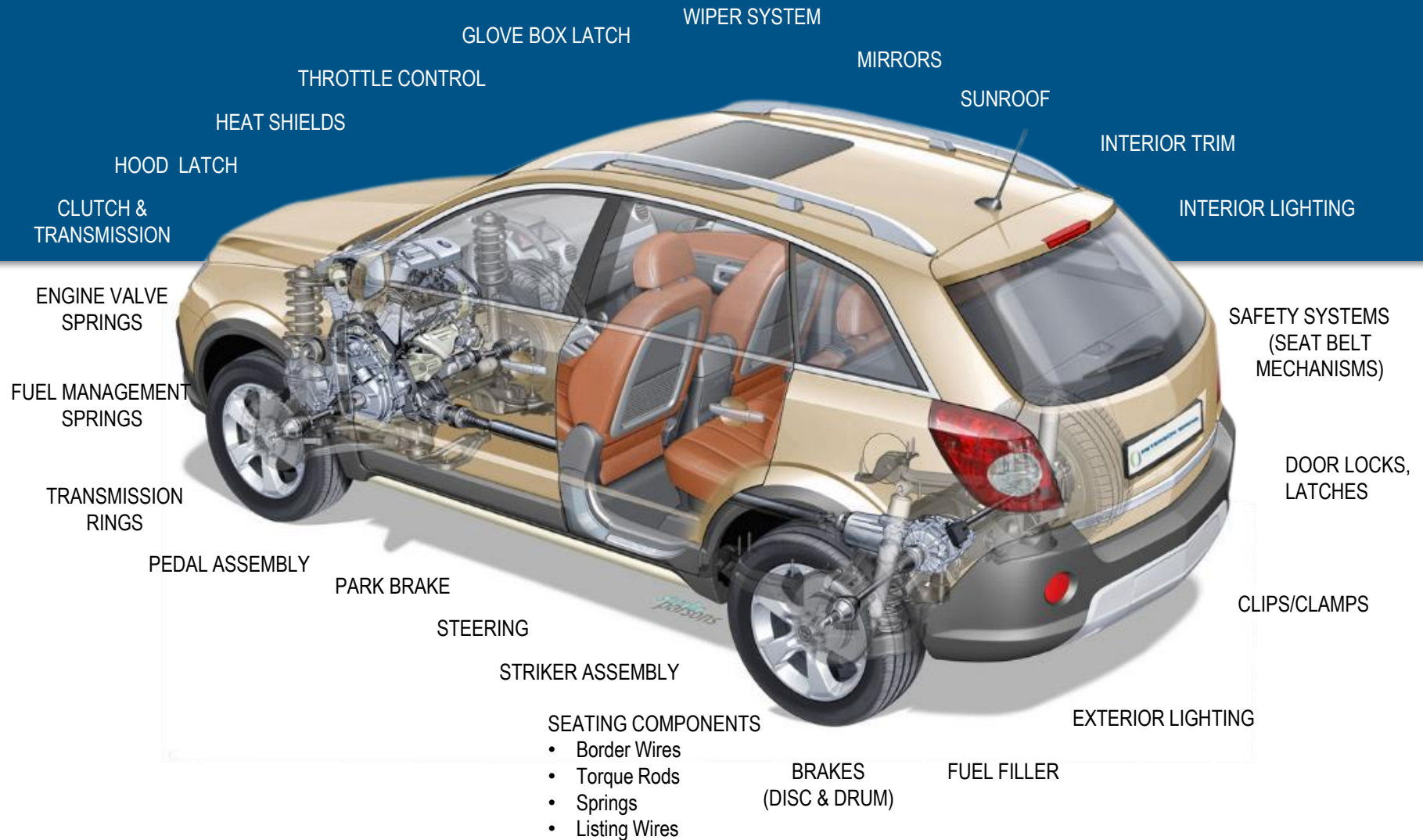
Products

- Wire Forms
- Engineered Metal Products
- Extension / Compression Springs
- Engine Valve Springs
- Snap Rings
 - Manufacturing
 - Athens, GA
 - Queretaro, Mexico
 - Three Rivers, MI
- Manufacturing Capability
 - Wire Sizes up to 12 mm



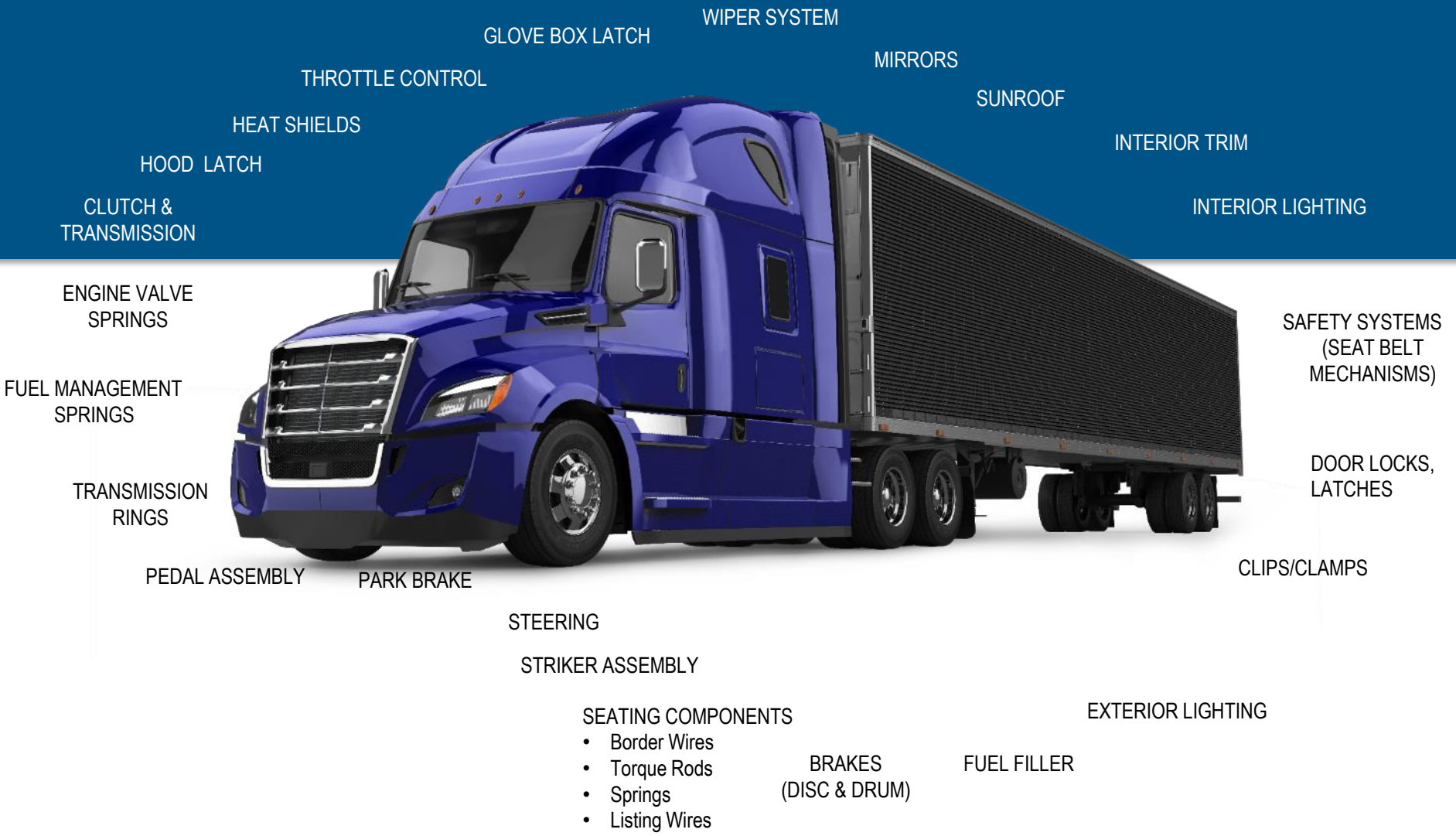
Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Automotive Applications



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Commercial Vehicle Applications



Agricultural / Industrial Applications



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Centralized Research & Development Capabilities

Prototyping

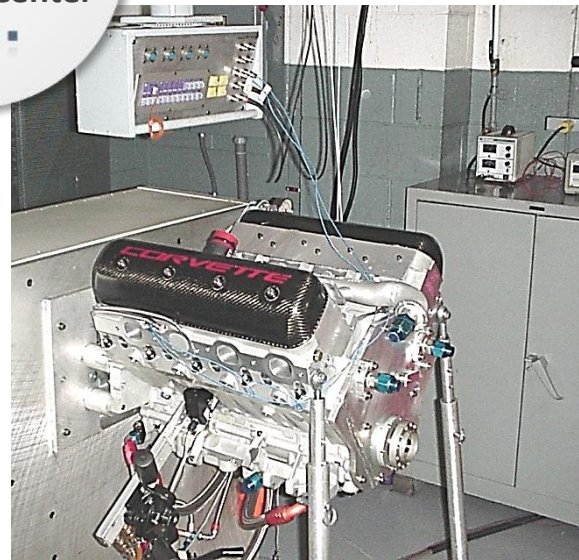


HOME OFFICE
Technical
Products Center



Metallurgic
Lab

Engineering

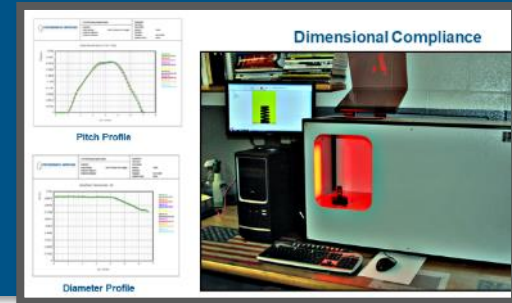
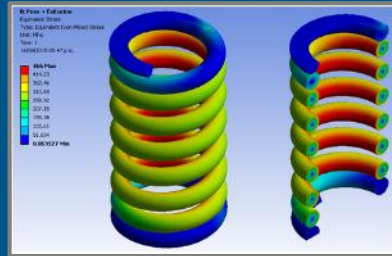
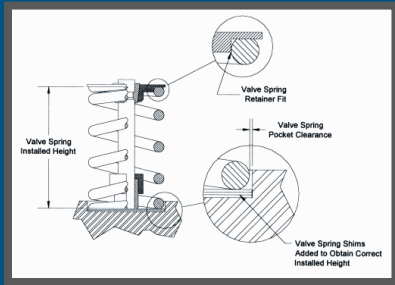


Dynamic
Lab



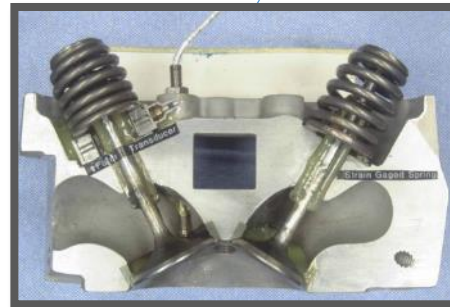
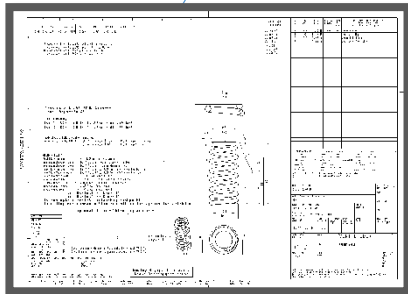
Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Peterson Advanced Development & Validation



► Concept ► Design ► Feasibility ► 3D Model ► Prototype ► Test ► Validation

Launch



The best products, coupled with practical, innovative thinking

Established in 1914, Peterson Spring is one of the largest privately held spring manufacturer in North America. Through designing, manufacturing and supplying springs, snap-rings, wire forms, clips, clamps, stampings, and a variety of sub-assemblies



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All



Lean Product Assembly Process & New Product Incubator

Peterson Heat Set Advantage

“We’ve developed a custom solution to fully automate heat setting that also monitors spring load inspections and rejects parts that are out of specification.”

Value Add

- Reduced set up time by 60%
- Reduced labor by 50%
- 100% load inspection

Customer Savings:

- **Competitive prices**
- **100% inspected parts**

As operating stress levels are increased and as equipment warranty periods are extended, the need for heat setting has become greater.



Typical heat set spring applications include valve springs, fuel injector springs, clutch springs, transmission springs, pressure release valve springs and medical device springs.



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

“Peterson’s Tech Center team combined with state of the art testing and metallurgy labs keeps us on the forefront of technology”



TSE was experiencing issues with their spring supply chain and asked Peterson Spring to redesign their power spring, and return springs.

Value Add

- PhD led staff, and metallurgist
- In-house labs and testing capabilities

Customer Savings:

- **Saved 0.1329 lbs. per part**
- **Saved \$200,000 in material costs per year**
- **Eliminated a SKU**
- **Increased run sizes, decreased shipping costs, and decreased quality inspection frequency**

Brake Return Spring



Led by Dr. Jon Slade, designed a return spring that would reduce part weight, and utilize the full tensile strength of the spring steel.



Peterson VA /VE Advantage

“VA/VE ideas are only one part of Peterson Spring’s engineering and design support to help customers recognize potential savings, while maintaining high quality and functional parts.”



A snap ring used in one of AWNC’s applications required a “hole” at the gap for assembly/disassembly. We proposed a “notch” configuration as a VA /VE idea that meets the insert/removal requirements, and provides a significant savings to the part cost.

Value Add

- Extensive transmission product knowledge and design expertise

Customer Savings:

- 28% cost improvement in manufacturing by avoiding a secondary operation of the hole.
- Saved \$53,000 a year
- Converting other similar part numbers for further savings



Discipline in Everything We Do · Hard Work · Integrity · Operational and Business Excellence · Innovation by All

Over 100 yrs. of **Research & Development**

DYNAMIC & METALLURGY LABS

**ENGINE VALVE
SPRINGS**



**LIGHT VEHICLE /
TRUCK**



Advanced Products

3,000,000/yr.

12,000 HP engines
200 MPH in >6 sec..

PAC Technology

Spintron

Dynamics & endurance
testing
HP & OEM type engines

OEM Production

30,000,000/yr.

Navistar, Cummins, John Deere,
Polaris, Harley Davidson, Mack

PAC Racing Markets & Products



- Engine Valve Springs
- Valve Train Components
- Extension Springs
- High Precision Springs & Rings
 - Solenoid springs
 - Injector springs
 - Throttle springs
- Spring Tools
- Engineered Metal Improvement Solutions



DRAG RACE



OPEN WHEEL



CIRCLE TRACK



HOT ROD & STREET CAR



POWER SPORTS



OFFROAD



Affiliations



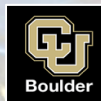
Motor & Equipment
Manufacturers Association



The Heavy Duty Manufacturers Association



Special Projects / Internships



To learn more about Peterson Spring



[Overview of Peterson Spring](#)



[See our Queretaro, Mexico Plant](#)



[Visit Peterson Spring on LinkedIn](#)



[Visit Peterson Spring on Facebook](#)



PETERSON SPRING
MANUFACTURERS OF ENGINEERED METAL PRODUCTS

21200 Telegraph Road • Southfield, MI 48033

Phone: 248-799-5400

Fax: 248-357-5874



sales@pspring.com

www.pspring.com

Learn more about PAC Racing Products and Performance



[PAC Racing video on YouTube! And many more!](#)



[Visit PAC Racing on Facebook](#)